Total Pages: 2

Reg No.:_____ Name:_____

APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY

THIRD SEMESTER B.TECH DEGREE EXAMINATION, DECEMBER 2017

Course Code: CH207

Course Name: CHEMISTRY FOR PROCESS ENGINEERING- I (CH)

Max. Marks: 100 Duration: 3 Hours

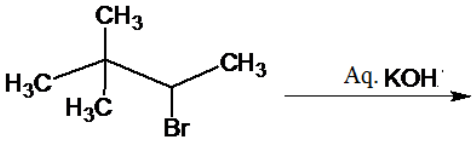
PART A

Answer any two full questions, each carries 15 marks. Marks

1 a) State and explain Huckel's rule with three examples. (4)

b) Explain the complete mechanism of nitration of benzoic acid. (3)

c) What are the possible products of the following reaction? Explain with complete mechanism. (4)

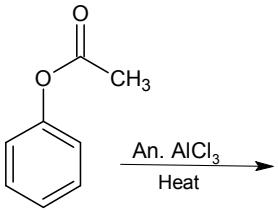


d) What are crown ethers? Explain the role of crown ethers in phase transfer catalysis with any two examples. (4)

2 a) Explain the following with structures i) Rearrangement of benzyl cation leads to formation of a highly stable cation.ii) When cyclopentadiene on treatment with sodium metal, a stable anion is generated. (4)

b) Give the reaction mechanism of bromination of aniline. (3)

c) Describe the following reaction with mechanism. (4)



d) What are carbenes? Give their classification. Write an example for cycloaddition reaction involving carbene. (4)

3 a) Illustrate the mechanism of the reaction between propene and hydrogen bromide in the presence of benzoyl peroxide. (4)

b) Describe pinacol-pinacolone rearrangement with an example. (3)

c) Describe the addition elimination and elimination addition SN reactions with examples. (5)

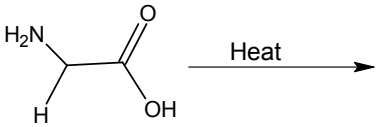
d) Compare the basicity and aromaticity of pyrrole and pyridine. (3)

PART B

Answer any two full questions, each carries 15 marks.

4 a) With proper equations explain Strecker and Gabriel phthalimide synthesis for aminoacids. (6)

b) Complete the reaction sequence. (2)



c) Explain the classification of synthetic detergents. (7)

5 a) Illustrate the basic chemistry involved in the identification tests (any three) of proteins. (6)

b) Give the method for the synthesis of Fluorescein and Congo red. Mention their uses. (6)

c) How sorbitol is synthesized from glucose? Explain with equation. (3)

6 a) Explain Killiani synthesis of ascending a sugar series. (4)

b) Draw the conformations alpha and beta glucose. (2)

c) Differentiate between the terms reducing and non reducing sugars with example (2)

d) What are biodegradable polymers? Explain the synthesis and applications of PLA and PGA. (7)

PART C

Answer any two full questions, each carries 20 marks.

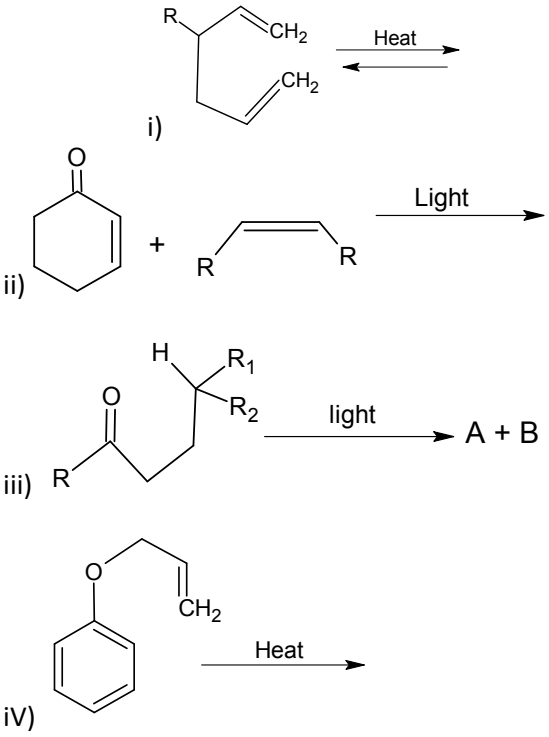
7 a) Give the structure and function of Vitamin C and Vitamin A. (4)

b) Explain the classification of enzymes based on their function. (6)

c) Describe fluorescence and phosphorescence with Jablonski diagram. (6)

d) Explain Norrish type I reaction with example. (4)

8 a) Complete the reaction series. (8)



b) What is meant by photosensitization? Explain with an example. (2)

c) Illustrate the strategies employed for dug design. What is meant by QSAR in drug design? (10)

9 a) Explain the structures of starch and cellulose. Give their biological functions. (5)

b) Describe the classification and functions of lipids. (5)

c) Explain the following with example (10)

i) Photosynthesis.

ii) Bioluminescence.

iii) Chemiluminescence.

****